

CLAIMS

1. An electrolyte for a photovoltaic device comprising (i) a layered clay mineral and/or an organically modified layered clay mineral and (ii) an ionic liquid.

2. An electrolyte for a photovoltaic device as claimed in claim 1, wherein said layered clay mineral and/or organically modified layered clay mineral is formed from a swelled dispersion of solvent and/or ionic liquid.

3. An electrolyte as claimed in claim 1, wherein at least part of the exchangeable inorganic ions of said organically modified layered clay mineral is ion exchanged with organic onium ions.

4. An electrolyte as claimed in any one of claims 1 to 3, wherein said ionic liquid is at least one member selected from the group consisting of quaternary ammonium salts, imidazolium salts, pyridinium salts and pyrrolidinium salts.

5. A photovoltaic device comprising a photoelectrode including a transparent conducting layer and a metal oxide semiconductor mesoporous film, a counter electrode arranged facing said photoelectrode and an electrolyte layer arranged between said photoelectrode and said counter electrode, wherein electrolyte layer is an electrolyte according to any one of claims 1 to 4.

6. A photovoltaic device as claimed in claim 5, wherein the conductive substrate of the photovoltaic device is obtained by coating, on a substrate, a conductive polyaniline dispersion stably dispersed in an organic solvent comprising (A) a polyaniline obtained by polymerization of aniline or an aniline derivative, (B) a sulfonic acid compound and/or (C) an organic polymer having a protonic acid group, (D) a molecular weight modifier, and (E) an organic solvent capable of dissolving the sulfonic acid compound (B), the organic polymer having a protonic acid group (C) and the

molecular weight modifier (D).

5       7.    A photovoltaic device as claimed in claim 6,  
          wherein said molecular weight modifier is at least one  
          aniline derivative having a substituent at the 4-  
          position.

          8.    A photovoltaic device as claimed in claim 6 or  
          7, wherein said polyaniline (A) is produced in the  
          presence of a phase transfer catalyst.

10       9.    A dye-sensitized solar cell comprising a  
          photovoltaic device according to any one of claims 5 to 8  
          and a photosensitizing dye carried on a metal oxide  
          semiconductor mesoporous film of the photovoltaic device.